

CLAIMS

1. (Amended) An evacuation apparatus comprising:
a first vacuum pump connected to a vacuum chamber; and
5 a second vacuum pump connected to said first vacuum pump;
wherein said first vacuum pump has a pair of multistage
pump rotors; and

wherein said first vacuum serves as a booster pump for
increasing a pumping speed of said second vacuum pump serving
10 as a main pump.

2. An evacuation apparatus according to claim 1, wherein
each of said multistage pump rotors has an inlet-side rotor
and an outlet-side rotor, and an axial width of said inlet-side
15 rotor is larger than an axial width of said outlet-side rotor.

3. An evacuation apparatus according to claim 1 or 2,
wherein said first vacuum pump is started after said second
vacuum pump is started.
20

4. An evacuation apparatus according to any one of claims
1 to 3, wherein a rotational speed of said multistage pump
rotors is controlled based on a temperature of a gas delivered
by said evacuation apparatus, a pressure of the gas, a
25 temperature of a rotor casing for housing said multistage
pump rotors, or electric current flowing into a motor for
rotating said multistage pump rotors.

5. An evacuating apparatus according to any one of claims
30 1 to 4, wherein said first vacuum pump and said second vacuum
pump are accommodated in a single enclosure.

6. (Added) An evacuation apparatus according to claim 1, wherein said second vacuum pump comprises a brushless DC motor.

5 7. (Added) A method of operating an evacuation apparatus having a booster pump connected to a vacuum chamber and a main pump connected to the booster pump, the booster pump having a pair of multistage pump rotors, said method comprising:

10 starting the main pump;
 operating the main pump at a rated rotational speed;
 starting the booster pump after a predetermined period of time has passed from said starting the main pump;
 operating the booster pump at a constant rotational
 15 speed; and

 when a pressure of a gas in the vacuum chamber is lowered to a predetermined pressure, increasing the rotational speed of the booster pump.